

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

Aircraft Certification Service
Washington, DC



U.S. Department
of Transportation

**Federal Aviation
Administration**

SW-05-82
August 19, 2005

<http://www.faa.gov/aircraft/safety/alerts/SAIB>

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts you, owners and operators of **Agusta S.p.A. Model A119 helicopters** with an air conditioning compressor installed by **Air Comm Corporation** Supplemental Type Certificate (STC) Number SR00463DE of an issue with the compressor drive belt.

TABLE 1

Service Bulletin	Title	Date
SB A119-3024, Revision B	Air Conditioner Oil Cooler Inlet Screen Assembly, Engine Governor Control Guard	August 1, 2005
SB A119-306, Revision C	Air Conditioner Drive Belt Change from Cogged to Poly-V Belt	August 1, 2005

Background

Air Comm Corporation recently issued service bulletins (SBs table 1) on the Agusta A119 helicopter, which is the result of a recent A119 incident where the pilot observed high oil temperatures.

The pilot made an immediate landing and found the air conditioner compressor drive belt had broken. This resulted in substantial damage to the oil cooler blower fan blades. In addition, the failed belt had damaged the mechanical engine governor control cable.

Recommendation

To prevent any further failures or potential injury, we recommend that you follow the information described in Air Comm's attached SBs.

For Further Information Contact

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Air Comm Corporation, Boulder Municipal Airport, 3300 Airport Road, Boulder, CO 80301; phone: (303) 440-4075; fax: (303) 440-6355.

Service Bulletin

Service Bulletin: SB A119-3024; Agusta A119 Air Conditioner Oil Cooler Inlet Screen Assembly, Compressor Safety Strap Installation, Engine Governor Control Cable Guard and Replacement of Compressor Drive Belt.

Subject: Installation of A119 Air Conditioner Oil Cooler Inlet Screen Assembly, Compressor Safety Strap Assembly Engine Governor Control Cable Guard and Compressor Drive Belt.

Date: 1 August 2005.

Applicability: Agusta A119 Helicopter, Equipped with the Air Comm Corporation A119-206-1 & -2 Air Conditioning System.

Serial Numbers: 14006, 14011, 14015, 14018, 14019, 14021, 14022, 14023, 14027, 14028, 14030, 14032, 14033, 14034, 14035, 14036, 14037, 14038, 14039, 14040, 14041, 14043, 14045, 14046, 14047, 14048.

Reference:

1. FAA / STC # SR00463DE, Agusta Helicopter A119 Air Conditioning System.
2. Compressor Installation Drawing # A119-304
3. Screen Assembly Drawing # A119-3024
4. Safety Strap Drawing # A119-3056
5. Governor Control Cable Guard, Drawing # A119-3502.
6. Instructions for Continued Airworthiness, A119-200M-1, Rev 6.

Compliance: Mandatory (within the next 25 hours of flight after the effective date, 8/5/05 of this bulletin and no later than August 20, 2005.)

I. Discussion:

This document provides for the immediate installation of an inlet screen to the oil cooler housing, installation of a compressor safety strap, and a governor control cable guard on all Agusta A119 aircraft equipped an Air Comm Corporation air conditioner system and replacement of the compressor drive belt.

1. The addition of this screen is the result of a recent belt breakage incident which caused substantial damage to the oil cooler blower fan blades. ACC is providing an inlet screen and clamp assembly to be installed on the inlet side of the oil cooler blower housing. The new inlet screen assembly will provide the necessary protection to prevent future mishaps of this nature from occurring.

2. The addition of a safety strap on the compressor mount is to restrain the compressor in case of failure of the belt tension link.
3. The addition of a governor control cable guard to protect the cable in case of debris from a broken air conditioner drive belt.
4. Replacement of the compressor drive belt to assure that every ACC A/C equipped A119 has a new belt that is properly aligned and tensioned.

II. Approval:

Technical aspects of this Service Bulletin are FAA/DER approved.

III. Purpose:

The purpose of this bulletin is to provide the necessary information, and required materials for the installation of the A119-3024-1 screen assembly, the A119-3056-1 strap and the A119-3502-10 cable guard on the Agusta A119.

IV. Bill of Materials:

Parts to be installed:

Item	Part Number	Description	Quantity
4.	A119-3024-1	Screen Assy.	1
5.	994FM-1075	Clamp	1
6.	A119-3056-1	Assy- Safety Strap	1
7.	A119-3502-10	Cable Guard	1
8.	CR3213-4-03	Rivet	9
9.	950 5M 09	Belt (Gates)	1

V. Accomplishment Instructions:

A. A119-3024-1 Screen Assembly

Removal

NOTE

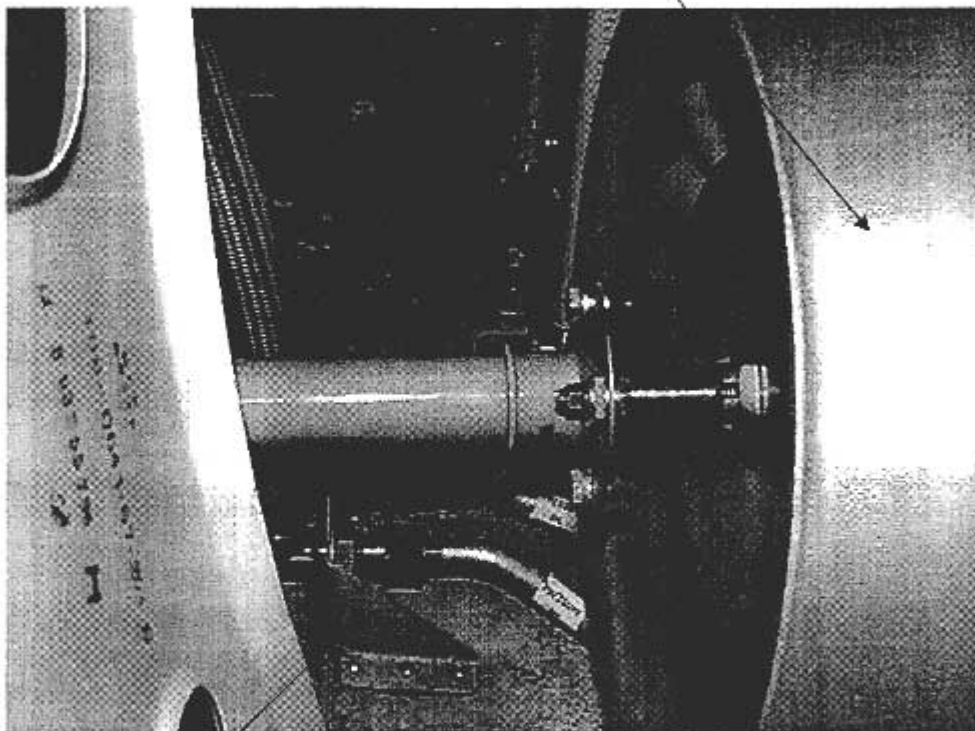
It will not be necessary to discharge the air conditioner system to perform the installation of the Inlet Screen Assy.

1. Disconnect the oil cooler drive shaft coupling just forward of the oil cooler blower inlet area per Agusta A119 Service Manual.

CAUTION

Insure that the oil cooler drive shaft is supported so as not to damage the driveshaft or coupling disc.

Oil Cooler Housing



Drive Shaft Coupling

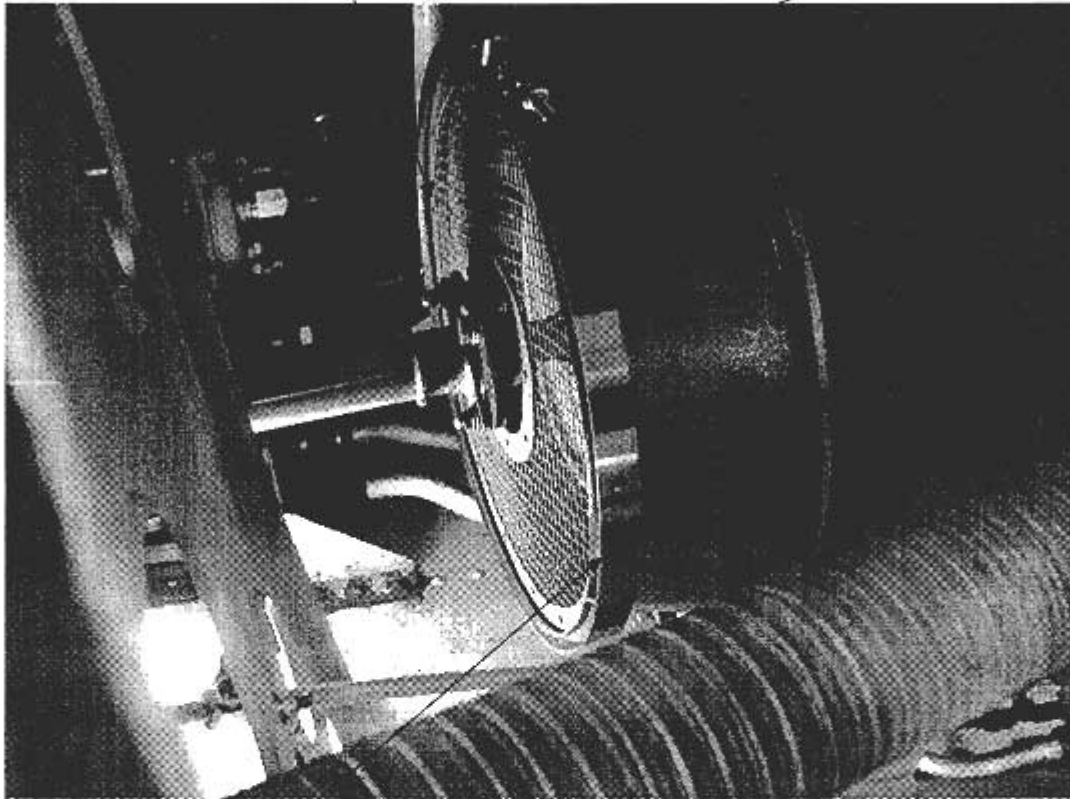
Figure 1

Installation / Replacement

1. Install A119-3024-1 screen assembly between the driveshaft segments placing the screen securely on the forward flange of the oil cooler blower housing.
2. Install the 994FM-1075 clamp around the screen and blower housing flange, and secure in place. Torque the clamp retaining nut to 50 in-lbs, and safety the retaining bolt and clamp halves using .032 safety wire.

A119-3024-1 Inlet Screen

Clamp retaining nut



994FM-1075 Clamp

Figure 2

3. Reconnect the oil cooler drive shaft coupling just forward of the oil cooler blower inlet area per Agusta A119 Service Manual.

Weight and Balance

The weight change is negligible. Therefore no change to the existing weight and balance is required.

B. Safety Strap Assembly.

Installation

1. Remove Nut from bolt on upper end of belt tension link as shown in Fig 3.
2. Remove bolt from lower end of belt tension link.

3. Install tab under nut and washer on upper end of belt tension link.
4. Install lower tab end under bolt as shown in figure 3.

Weight and Balance

The weight change is negligible. Therefore no change to the existing weight and balance is required.

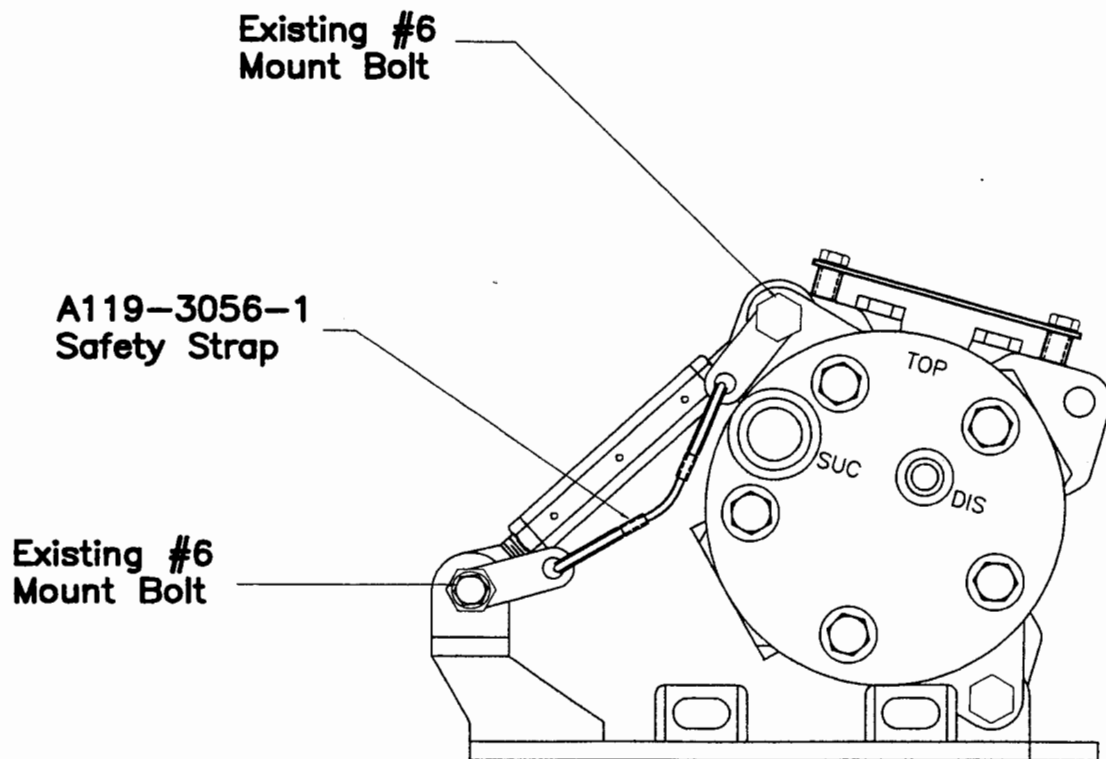


Figure 3

C. Governor Control Cable Guard Assembly.

Installation

The A119-3502-10 Guard mounts to the LH side wall of the transmission deck. (See Figure 4) Align the guard per dimensions shown in Figure 4 and match drill transmission deck side wall. Coat faying surfaces of with proseal 890 and install guard using 9 ea. CR3213-4-03 Cherry Max Rivets using an appropriate rivet puller.

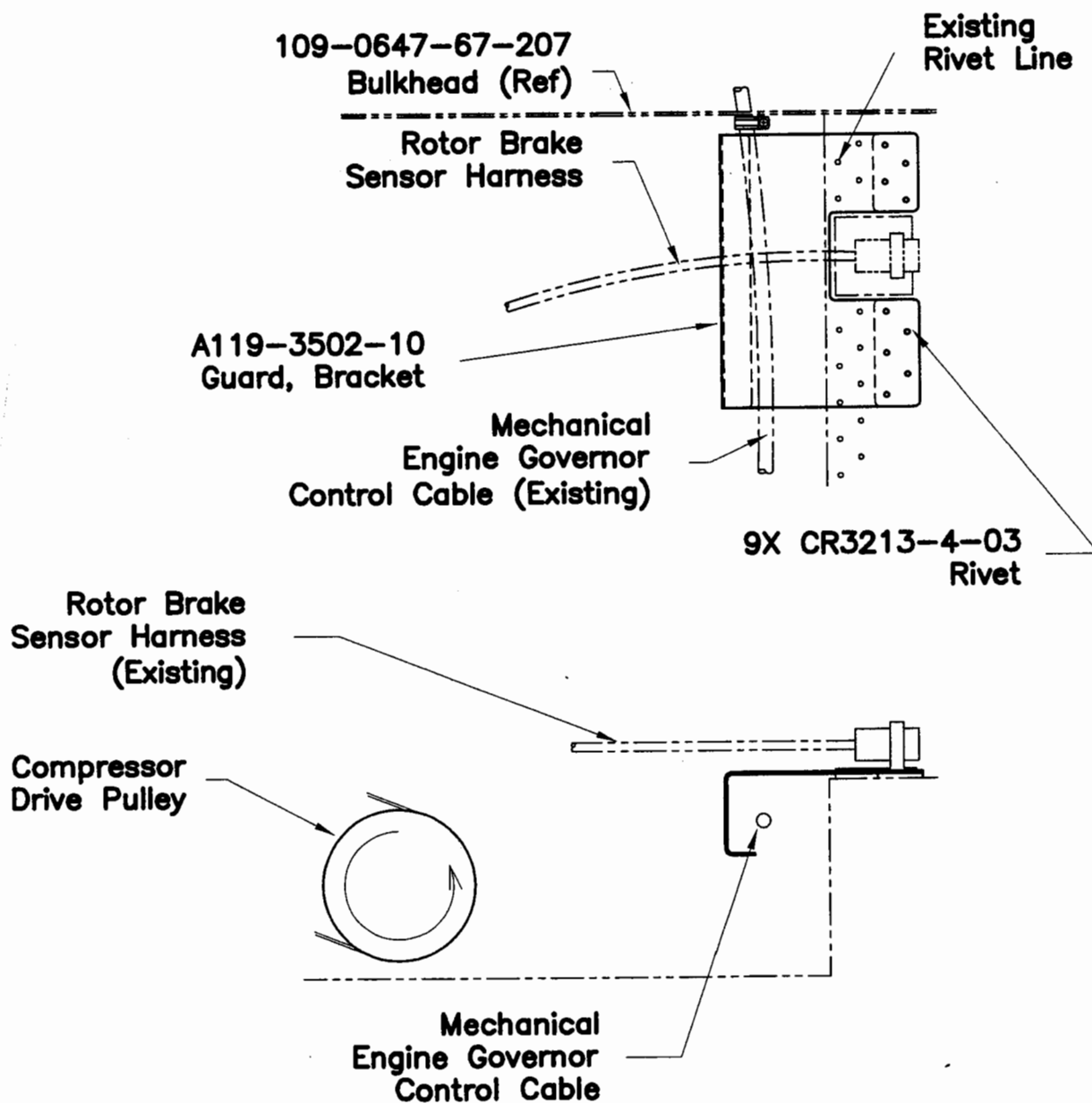


Figure 4

D. Replacement and adjustment of the Compressor Drive Belt.

Removal, Replacement & Adjustment of Compressor Drive Belt

1. It is necessary to access the transmission compartment to remove, replace, or adjust the compressor drive belt.
2. Cut safety wire on the compressor belt tensioning link and the belt tensioning link jam nuts, and loosen the respective jam nut(s).
3. Before attempting to adjust the drive belt tension, insure that the compressor mounting / attaching bolts have been loosened, to allow free movement of the compressor body on the compressor mount.
4. Remove the compressor drive pulley in accordance with the instructions given in paragraph 4. removal, installation / replacement of compressor drive pulley of this manual.
5. Adjust the belt tension link to loosen the belt, and remove belt from the compressor & drive pulley.

Replacement

1. Install the drive belt on the compressor & drive pulleys.
2. Replace the compressor drive pulley in accordance with the instructions given in paragraph 4. removal, installation / replacement of compressor drive pulley of this manual.
3. Adjust belt tension (See Adjustment below).
4. Tighten the belt tensioning link jam nuts and re-safety using .032 safety wire.
5. Re-torque the compressor mounting / attaching bolts to 80 to 100 inch lbs. (9.04 – 11.30 Nm).

NOTE

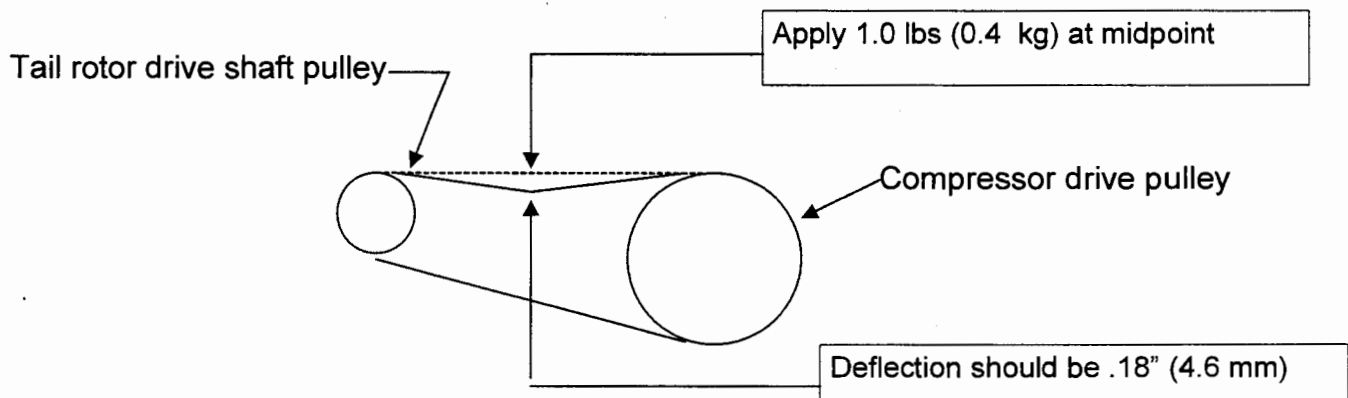
Care should be taken to insure that the new belt is not damaged (nicked or cut) during installation.

Adjustment

NOTE

Proper belt tension is important to insure a long belt service life and to avoid excessive loads on the compressor, and bearing assemblies.

1. The correct belt tension for the belt is 1.0 lbs. (0.4 kg.) This can be achieved with the aid of a **belt tensioning tool** (Kent-Moore® BT-33-73F Belt Tension Gauge or Equivalent). (This is the preferred method of obtaining proper belt tensioning).
2. An alternate method is to observe a .18" (4.6 mm) belt deflection when 1.0 lbs (0.4 kg.) of force is applied at the midpoint of the belt.



NOTE

The belt tension should be checked, and re-adjusted, if necessary after the first two hours of operation for a newly installed belt.

NOTICE OF COMPLIANCE

Upon completion of the requirements of this Service Bulletin, this form must be returned to:

Glen Pfankuch
Air Comm Corp
3300 Airport Rd.
Boulder CO. 80301
Phone 303-440-4075
Fax 303-440-6355
e-mail, info@aircommcorp.com

Aircraft Serial No.	
Total Time in service	
Date Completed	
Performed by	
Owner/Operator	

Please use the space below to comment on any difficulty you encountered while performing these task.

Service Bulletin

Service Bulletin: SB A119-306; Agusta A119 Air Conditioner Compressor Drive Belt Change from "Cogged" to Poly-V Belt.

Subject: Removal & Replacement of A119 Air Conditioner Compressor Drive Belt Design Change.

Date: 6 June 2005, Rev N/C
18 July 2005, Rev A
27 July 2005, Rev B
1 August 2005, Rev C

Applicability: Agusta A119 Helicopter, Equipped with the Air Comm Corporation A119-204-1 & -2 Air Conditioning Systems.

Serial Numbers: 14006, 14011, 14015, 14018, 14019, 14021, 14022, 14023, 14027, 14028, 14030, 14032, 14033, 14034, 14035, 14036, 14037, 14038, 14039, 14040, 14041, 14043, 14045, 14046, 14047, 14048.

Reference: 1. FAA / STC # SR00463DE, Agusta Helicopter A119 Air Conditioning System.
2. Compressor Installation Drawing # A119-306
3. Drive Pulley Drawing # A119-3042
4. Instructions for Continued Airworthiness A119-206M-1

Compliance: **Mandatory** (within the next **25 hours** of flight after the effective date of (08/19/05) this bulletin and no later than September 15, 2005.)

I. Discussion:

This Document provides for the replacement of the existing compressor, and cog belt with a Poly-V belt, and Compressor assembly. The Poly-V belt installation reduces both noise and vibration levels, and is considered to be a major improvement to the integrity of the overall compressor installation.

II. Approval:

Technical aspects of this Service Bulletin are FAA approved.

III. Purpose:

The purpose of this bulletin is to Remove, and Replace the air conditioner systems positive (cogged) belt, and pulley design, with a smoother running Poly-V belt design.

With this change the existing compressor and compressor drive pulley are replaced.

Rev. A. 7/18/05. Deleted Applicability S/N 14037 call out.

Rev. B 7/27/05. Deleted Oil Cooler Inlet Screen installation.

Rev. C 7/29/05 Compliance changed to mandatory, added compliance check sheet.

IV. Bill of Materials:

Parts to be Removed:

Item	Part Number	Description	Quantity
1.	A119-3010-1 or -2	Compressor Assy.	1
2.	A119-3004-1	Drive Pulley	1
3.	950 5M 09	Drive Belt (Positive / Cogged)	1
4.	NAS6604-9	Bolt	5
5.	NAS1149F0432P	Washer	5
6.	NAS1149F0463P	Washer	5
7.	MS21042L4	Nut	5

Parts to be Installed:

Item	Part Number	Description	Quantity
1.	A119-3042-11	Drive Pulley	1
2.	NAS6604H6	Bolt	5
3.	ES35119-1	Drive Belt (Poly-V)	1
4.	A119-3040-1	Compressor Assy.	1
5.	440-841	#8 O-ring	1
6.	440-842	#10 O-ring	1
7.	35115	Wire Cap	2
8.	A119-206M-1	Instructions for Continued Airworthiness	1

V. Accomplishment Instructions:

Removal

1. Discharge air conditioner system per A119-206M-1, Chapter 5, Servicing.

CAUTION

Refrigeration servicing should be performed by qualified personnel only!

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Continued

Accomplishment Instructions (continued)

2. Disconnect #8 and #10 refrigerant lines from the ports located on the aft side of the air conditioner compressor body. Remove and discard O-rings from hose fittings. Cap lines to prevent contamination, and oil loss.
3. Cut safety wire, and loosen Jam nuts on compressor belt tensioning link assembly. Turn the barrel section of the link assembly to loosen the compressor belt tension.
4. Disconnect the Compressor clutch wire at the compressor.
5. Disconnect and Cap wires ACCA5A22 & ACCA5B22 connecting to the compressor temperature sensor wires using two each 35115 caps, and secure wires as necessary. (Figure 1.1)

NOTE

The new A119-3040-1 Compressor assembly is not equipped with a temperature sensor, therefore the need to cap and secure wires ACCA5A22 & ACCA5B22 is required to comply with this Service Bulletin.

6. Remove the AN6H-34A Bolt that connects the upper end of the belt tensioning link to the compressor mount assembly. Remove A119-3012-9 sleeve from compressor, and retain parts for reinstallation on new compressor assembly.
7. Remove the lower AN6H-34A Bolt, and S-3501EC-5 Sleeve from the bottom of the compressor assembly, and retain parts for reinstallation on new compressor assembly.
8. Remove Compressor from the aircraft.
9. Remove the five (5) NAS6604-9 Bolts, NAS1149F0432P Washers, NAS1149F0463P Washers, and the A119-3004-1 Drive Pulley from the oil cooler driveshaft.
10. Remove the 950 5M 09 Compressor drive belt.

NOTE

Once removed from the aircraft the following parts are to be rendered unusable and scraped on site: A119-3010-1 or -2 compressor assembly, A119-3004-1 drive pulley, 950 5M 09 drive belt.

Installation / Replacement

1. Install new A119-3042-11 Drive Pulley, NAS6604H6 Bolts, and ES35119-1 Belt on the oil cooler driveshaft / rotor break disc assembly. Torque bolts 75 to 95 in-lbs. Safety wire using .032 safety wire. (Figure 1.2)

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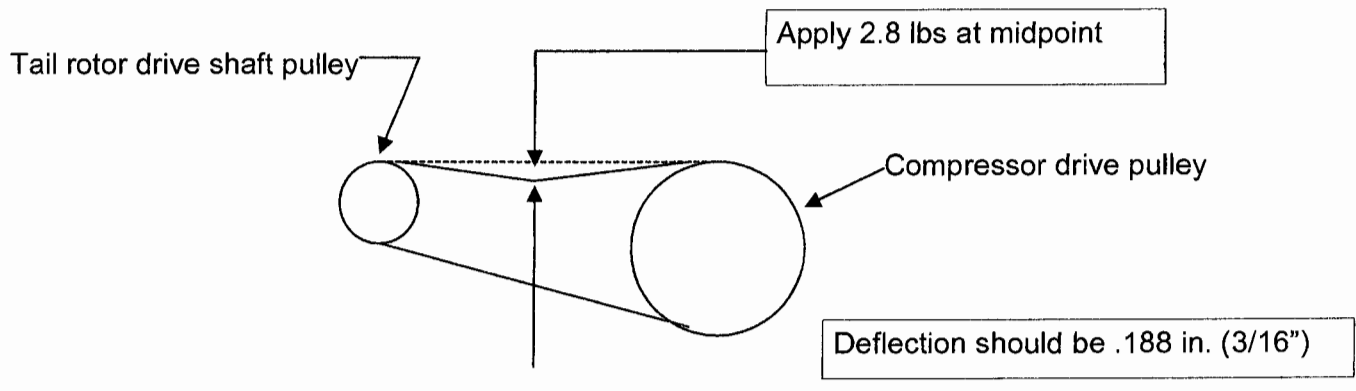
Installation / Replacement (continued)

2. Install new A119-3040-1 Compressor on existing compressor mount assembly, reinstall AN6H-34A Bolt, NAS1149F0633P Washers in upper and lower compressor mounting lugs. Reinstall the A119-3012-9 sleeve, and belt tensioning link on the upper mounting bolt and torque 110 to 130 in-lbs.
3. Install new ES35119-1 Belt on the compressor drive and compressor pulleys.
4. Retention the compressor drive belt using the compressor belt tensioning link assembly:

NOTE

Proper belt tension is important to insure a long belt service life and to avoid excessive loads on the compressor, and bearing assemblies.

When applying 2.8 lbs. of force to the mid span of the belt the deflection should be .188 inches (3/16")



NOTE

The belt tension should be checked, and re-adjusted, if necessary after the first thirty to sixty minutes of operation for a newly installed belt.

Tighten and safety wire the belt tensioning link jam nuts using .032 safety wire.

NOTE

Belt alignment / adjustments should be made I/A/W Standard Practice, Post Installation – Belt Adjustment Instructions, Chapter 6, Page 6-7.

6. Recharge system in accordance with A119-206M-1, Chapter 5, Servicing.

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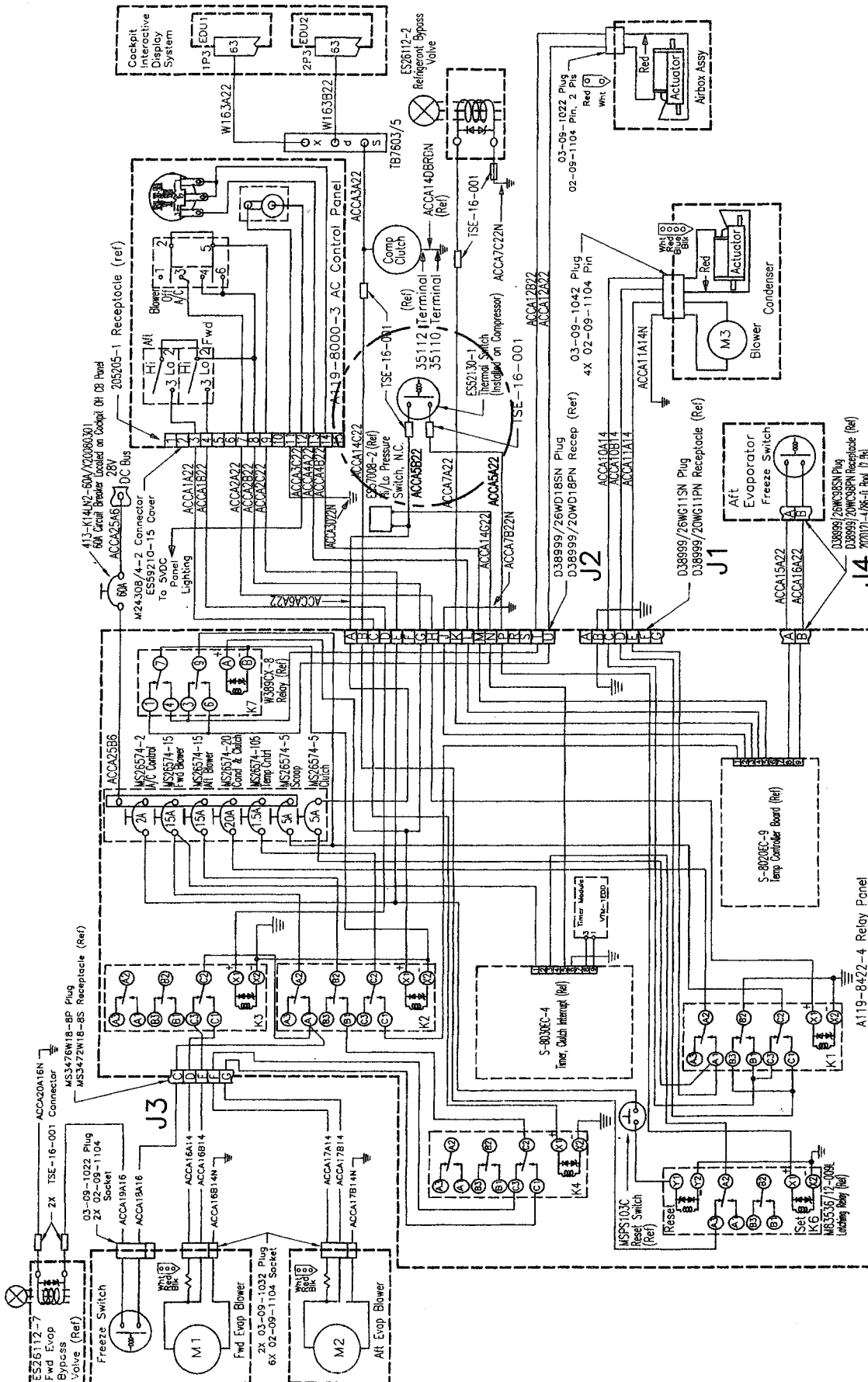


Figure 1.1

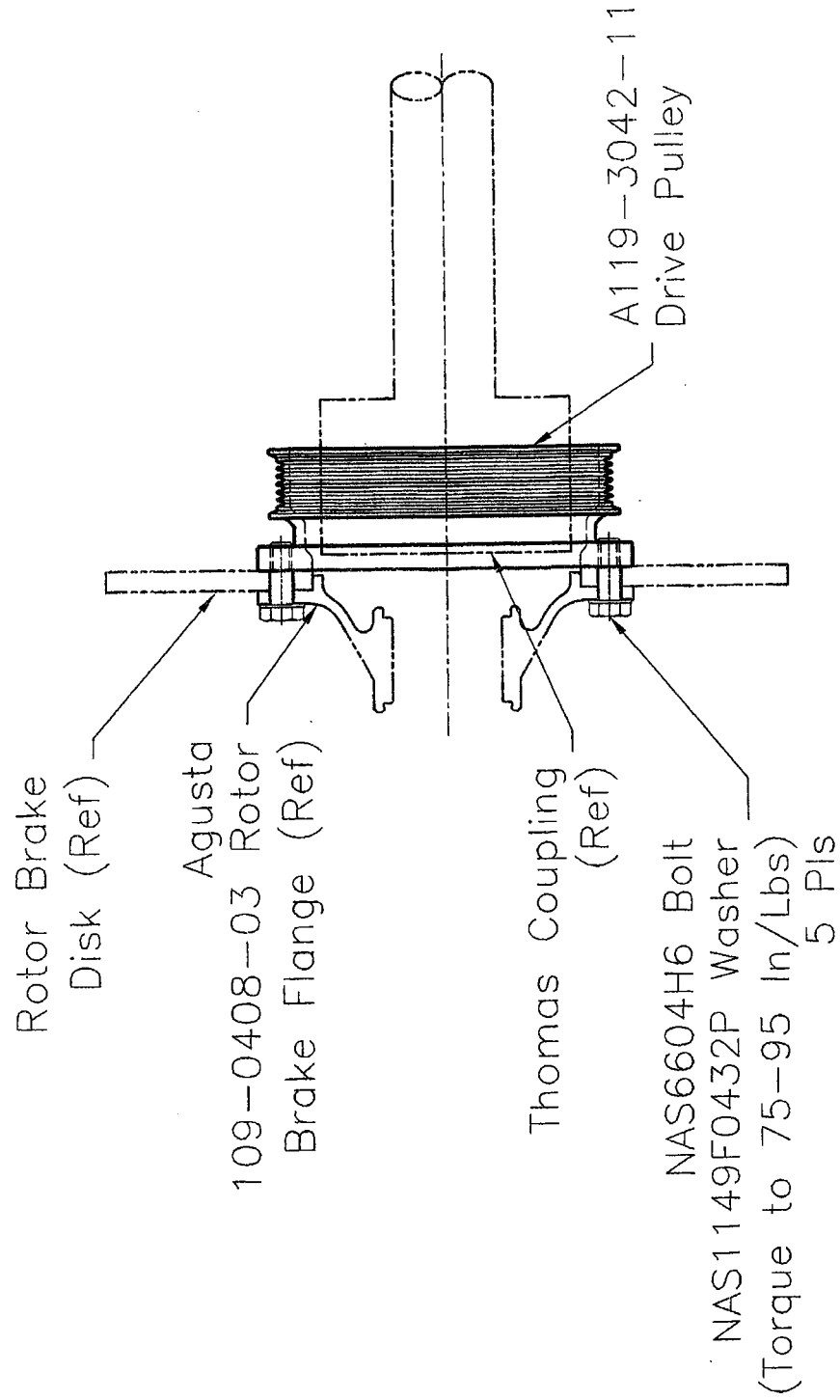


Figure 1.2

NOTICE OF COMPLIANCE

Upon completion of the requirements of this Service Bulletin, this form must be returned to:

Glen Pfankuch
Air Comm Corp
3300 Airport Rd.
Boulder CO. 80301

Phone: 303-440-4075
Fax: 303-440-6355
E-mail: info@aircommcorp.com

Aircraft Serial No.	
Total Time in service	
Date Completed	
Performed by	
Owner/Operator	

Please use the space below to comment on any difficulty you encountered while performing these task.